World Chronicle

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United Nations

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OUTER SPACE: THE UN ROLE

The United Nations has played an important role in mitigating potential military confrontation by promoting international cooperation and developing a legal framework for the peaceful uses of outer space. OOSA, the UN's Office for Outer Space Affairs, prepares and distributes reports, studies and publications on various fields of space science and technology applications, international space law and international cooperation in those areas. In this edition of **World Chronicle**, Dr. Mazlan Othman, Director of the United Nations Office for Outer Space Affairs, talks about space exploration and human development.

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ANNOUNCER: From United Nations Headquarters in New York, this is **World Chronicle**, an unedited interview programme about major global issues.

Here now to introduce our guest is the host of today's **World Chronicle**.

LITTLEJOHNS: I'm Michael Littlejohns, and this is **World Chronicle**.

The United Nations has been committed to space being used for peaceful purposes since the launch of the first man-made satellite, Sputnik 1, in 1957. This launch marked the dawn of the Space Age, the first use of satellite technology for the advancement of science. OOSA, the United Nations Office for Outer Space Affairs, is a focal point of the UN's efforts to promote international cooperation in the peaceful uses of outer space. From legal to commercial issues, OOSA is responsible for one of the most important and fascinating aspects of humankind's progress: the exploration of the universe above and beyond planet earth.

Our guest today is an expert of space science. She is Dr. Mazlan Othman, Director of the United Nations Office for Outer Space Affairs. Joining me to talk to Ms. Othman are Colum Lynch of *The Washington Post* and Robert Holloway of *Agence France-Presse/AFP*.

Ms. Othman, welcome to **World Chronicle.**

OTHMAN: Thank you.

LITTLEJOHNS: Professor Othman, it seems that with all the fuss over Star Wars and the missile defence system which President Clinton has shelved for the time being and left it to his successor, various other aspects of the military or defensive use of outer space have rather over-shadowed the peaceful uses of outer space – the development of new technical applications because of space technology. Is OOSA suffering from that?

OTHMAN: No. I think it makes OOSA's reason for existence all the more important because the Office was set up with a mandate to emphasize on the peaceful uses of outer space. OOSA, the Office for Outer Space Affairs, was set up during the Cold War exactly in order to make sure that the United Nations focuses on the peaceful uses of outer space. So it makes our role more important.

LITTLEJOHNS: What developments have rarely occurred in the commercial area as a result of outer space exploration and the new technologies which are used for such an exploration?

OTHMAN: One of the most important things that has happened today is the extremely commercial use of space...

LITTLEJOHNS: For satellite use ...

OTHMAN: For satellites and rockets. And if you look at the budgets, the investment in space activities, the private sector investment exceeded that of the government sector investment since 1997 and that trend will continue. And therefore the role of the private sector in space is becoming more and more important and we, as an office, feel that it is very important that we engage the private sector for that reason. And it is also for this reason that we involve the industry in our activities.

LITTLEJOHNS: Industrial corporations are sending up their own rockets?

OTHMAN: Oh, yes.

LITTLEJOHNS: And satellites?

OTHMAN: Yes. If you look at Ariane Espace, the French company, that's totally ...

LITTLEJOHNS: It does not have government involvement?

OTHMAN: It has government involvement in the sense of the development of rockets through the European Space Agency budgets, but in terms of the launching, how to market the launching, in terms of the pricing, that's an entirely private sector engagement.

LITTLEJOHNS: And this is also the case in the United States and Japan, for example?

OTHMAN: The United States and Japan now are rather different. There are some that are totally private sector, for instance the Pegasus Launch. That's a launch which is offered by the company called Orbital Sciences. And then there's the Boeing Delta and so on. So there are some companies in the US that have their own launch vehicles and they are, then again, the government launch vehicles.

LITTLEJOHNS: I can see now I have to read up on this subject a lot more.

LYNCH: You had mentioned that the private sector and governments have been out in front in this area for years and it sort of makes one wonder what the point of an organization like yours is all about. You have a number of conventions that your group has helped to bring into fore – or not into force but have put together things like the Convention on Registration of Objects Launched in Outer Space, the agreement covering the activities of states on the moon and other celestial bodies. I mean it sounds all a bit strange to the ordinary person and makes you sort of wonder what is it that you guys actually do and it doesn't seem like there's a lot of support for some of these conventions; five signatures.

OTHMAN: Well, if you look at space – and we know that space has no

ownership. Space is a common heritage of mankind and if we're looking at a body which is going to administer space I think the most logical body would be the United Nations. And if there's an area where the United Nations is extremely relevant it is actually in space. Even if we are talking about the sea, there are some areas where people can claim ownership to certain areas of the sea but space nobody, not a single country, not any individual can claim ownership to space and that is where the United Nations becomes relevant.

LYNCH: But certainly the United Nations at this point does not administer sort of American and European space efforts? They certainly just consider it new frontier and they go out and explore it on their own. So then is there kind of really a need for the UN to sort of step in and regulate that?

OTHMAN: Well, it's true that the United Nations does not exactly tell the United States or the European countries or the developing countries what sort of programmes they develop on earth. But the minute they go up into space then their behaviour, their code of conduct, will be dictated by these treaties and conventions. And everyone is aware of that because there needs to be some kind of a framework in which you conduct yourself in space and that's the reason for those treaties and conventions.

LYNCH: Just a follow up. The registration of objects launched into outer space is there such a registry and how many objects are there and does anybody tell you what's in space?

OTHMAN: Yes. Amazingly enough in most countries that are responsible space faring nations they have their own national registries where they register every object that goes into space and this is informed to the Secretary-General. Of course OOSA actually keeps that register.

LITTLEJOHNS: The Secretary-General of the United Nations? Kofi Annan at the moment.

OTHMAN: Yes. Supposing some country discovers some objects from space, some part of a spacecraft of another country, they too report those incidents to us. And we continuously receive such information.

LITTLEJOHNS: How can you be sure everything is reported?

OTHMAN: Oh, we can never be sure that everything is reported but the number of reports that we receive is quite impressive.

HOLLOWAY: Is there a universally accepted definition of where outer space

begins and for that matter where it ends?

OTHMAN: Of course outer space never ends. There's the whole universe and then there's not only one universe, which is our universe, but there are in theory many other universes.

HOLLOWAY: But your office wouldn't claim to be going there?

OTHMAN: No, of course not. But even the issue of where outer space begins is a contentious issue because scientifically where would it begin. And people say it's about one hundred kilometers but politically this may not be acceptable to some people because it's very important to people where airspace ends and space begins. Because you'll have jurisdiction over your own airspace but you do not have jurisdiction over space because as I said before space is not for appropriation. And so this is still an issue which is being debated.

HOLLOWAY: You mentioned the registry of objects which have been fired into space, how serious is the problem of debris floating around in space?

OTHMAN: Debris is a serious problem. In fact, one of the major issues facing the Committee for the Peaceful Uses of Outer Space, of which we are the secretariat, is the issue of the space debris. And the issue goes right down to what we do here on earth because we've got to make sure the rockets that we launch, the satellites that orbit the earth, have certain characteristics that will minimize space debris. But it is already becoming a major problem and it has to be resolved.

LYNCH: What are the strangest sorts of things you find floating around in space or falling to the earth? Any unsuspected items you've added on to your registry of objects launched into space?

OTHMAN: No, nothing unusual except that if you're looking at what debris does in space even a fleck of paint in space can cause a major problem to a computer system in space.

LITTLEJOHNS: What can cause a major problem?.

OTHMAN: A fleck of paint.

LITTLEJOHNS: Really?

OTHMAN: Yes, because they're travelling at extremely high speeds. I mean thousands of kilometers per hour and when they impact a surface they will cause a lot of damage. So here we're talking about flecks of paint, we're not even talking about bits of rocket....

LITTLEJOHNS: What about all that junk that was left on the moon is that there for the rest of time?

OTHMAN: Yes, they will be there for millions of years. The footprints that Neil Armstrong left will be there for millions of years.

LITTLEJOHNS: But there's a lot of stuff there as well isn't there? Mechanical stuff.

OTHMAN: Yes. Mirrors and things like that.

HOLLOWAY: In addition to debris the British Government did a survey recently I believe, or a report, on what was to be done about these threats from asteroids which are not debris but natural. How serious a threat is that and if a really big asteroid was on its way towards the earth is there anything that could be done about it? Presumably there would be a lot of warning that is coming.

OTHMAN: No. Well, if you watch Armageddon or – what was the name of the other movie? Deep Impact? Yeah. You'd think that if you sent an astronaut into space and he plants a nuclear device that would blow the thing up we might be saved but there are other aspects to this. The asteroids that will impact earth are not all solid objects like this table or solid objects like rocks. Some of them are rather friable, much like bits of sand cemented together. So if you just imagine yourself putting a hammer to a block of sand it doesn't do you much good. So if an asteroid is of that nature the nuclear devices that you plant in there will not do any good. And even if it was solid and you do break it up you'll have to break it up at the right point in space so that they don't all rain back on earth because if they do come back on earth the impact might even be greater than just the one object. I think we've all seen what Comet Shoemaker-Levy 9 did on Jupiter and that was extremely passive. And remember Jupiter is huge and those comets, bits of Comet Shoemaker-Levy 9, should not have had such big impacts but they did and we will have big impacts on earth.

LITTLEJOHNS: This is **World Chronicle**. Our guest is Dr. Mazlan Othman, Director of the United Nations Office for Outer Space Affairs.

Dr. Othman, I read a report on, I think, Reuters the other day from London that somebody's proposing, or perhaps has already done it, to sell real estate so to speak on the moon. Now I mean this seems to be a rather outrageous enterprise. What does your office think of that kind of thing?

OTHMAN: I think as a gimmick – I mean nobody can stop such people.

LITTLEJOHNS: Apparently some people have actually bought it.

OTHMAN: Yes, yes. Some people have also sold stars. I mean the business is you take up a star chart and you can ask a person which star he or she wants to buy and that star is yours. And similarly people are selling real estate on the moon. But as you know from the United Nations treaties, the moon is not meant for an appropriation of an individual.

LITTLEJOHNS: But perhaps you could solve the UN's financial problems by opening a real estate office.

LYNCH: Part of your job is to promote technology sharing on all sorts of wonderful things that come from outer space. I mean has any of this technology – I mean does it prove terribly useful to a developing country like Benin or Guatemala that doesn't have space programming? I mean how does it change, how does it make a difference in their lives?

OTHMAN: It can make a difference in their lives and that's what the Office is about. They may not own the satellites that take the pictures, what we call the remote sensing pictures, but they could be using those remote sensing pictures to look at the rate of desertification and also to see where they might find water. So although they do not have the technology they may benefit from the applications.

LYNCH: Right. But what is the UN's role? I mean do you have any power to convince a commercial satellite company to give free satellite imagery on desertification to Morocco or Tunisia?

OTHMAN: Yes. We try to persuade but what we do best of all is to what we call capacity building in these countries and we have workshops, training courses, seminars, conferences, expert meetings in these countries to create an awareness of what space technology can do. And we are hoping that with the awareness that they've got of what space technology can do they may apply them to their decision-making processes. I think most important of all we are looking now at the issue of disaster management or disaster reduction and we are talking about can we get private sector companies to give away data free of charge. In fact, some of them are already doing that even without us asking them to do that. Of course there are still some who go on a commercial basis but there are many more who will give that information in a disaster situation quite freely.

LITTLEJOHNS: Colum, our producer pointed out that in fact Guatemala did have a space programme at the time of the Mayans.

LYNCH: My apologies to the Guatemalans.

HOLLOWAY: What about the level of cooperation down here on earth? Is your office entirely funded by UN contributions or do you get help from bodies like the European Space Agency and from NASA?

OTHMAN: We are funded by both. We are funded both in the UN regular budgets but in terms of our programmes we are funded more by Member States. And the European Space Agency, which you have mentioned, is one very good example of an agency that has been continuously sponsoring our activities, both in terms of expert meetings as I mentioned before, seminars, and also pilot projects.

HOLLOWAY: Can you tell us about the size of your office? It's still quite a small....

OTHMAN: It's a very small office. There's less than 20 of us. But I think because our role is more to galvanize action, is more to facilitate we don't ourselves need to have all those experts in our organization. However, within the United Nations system there are many experts on space technology applications. One good example is the World Meteorological Organization which uses a lot of satellites for meteorological purposes. The FAO, the Food and Agricultural Organization, also uses a lot of space technology applications. There is of course the ITU, the International Telecommunications Union. So these are space-related activities within the United Nations and in a sense they are part of the space experts within the United Nations system, even though our Office is small.

LITTLEJOHNS: Dr. Othman, as an astrophysicist do you feel that there's a reasonably strong possibility that there's intelligent life out there in outer space and if so should the extraterrestrials one day apply for membership of the UN?

OTHMAN: Actually scientifically there is no reason why life cannot exist outside of our earth. It also depends on what you define as life so from...

LITTLEJOHNS: Well, I did say intelligent life not little microbes or whatever.

OTHMAN: Yes. So again there is no reason why intelligent life cannot exist outside of our earth. Remembering the fact that our star is just a normal star and there are billions of those normal stars in our galaxy alone and there are billions of galaxies out there in the universe, so even if the chances of intelligent life evolving is minute, if you multiply that by the huge number that I've just mentioned the chances are still there. And there is already a move to bring to the United Nations' attention that if the aliens wanted to

communicate with us who might they communicate with and what and how do we communicate with them. Now this is a very important issue because if there are aliens we need to put forward a united front in terms of humanity and what is that united front? This is what some Member States are asking.

LITTLEJOHNS: Perhaps we should run the Secretary-General's telephone number at the end of the programme.

OTHMAN: Yes, that's right. The hotline.

LYNCH: You have something here called the Agreement on the Rescue of Astronauts, what is that all about? Is there much danger of astronauts being held hostage in this day and age?

OTHMAN: Well no, it just means that if an astronaut is lost in space for instance and there might be another spacecraft that might rescue the astronaut then it is the obligation of that Member State, the spacecraft, to bring the astronaut safely back to his country. Or, if the astronaut lands in another country – as you know astronauts still land on the sea, so if somebody saves that astronaut he should be brought back to his country safely. That's basically what the Rescue of Astronauts means.

HOLLOWAY: That, I think, is one of the five treaties but there hasn't been a new treaty since 1979 if my memory is right. Are there any treaties pending or are there any...

OTHMAN: There are no more treaties pending.

HOLLOWAY: Are there any obvious holes in the treaty system?

OTHMAN: There are some holes in the treaty system and that is being addressed by the Committee for the Peaceful Uses of Outer Space, especially the legal sub-committee, because in terms of what do you define as a launching state is now open to question because it's not only states that are launching rockets today but also the private sector. And rockets are being launched from all over the place – from submarines, from underground silos, from aeroplanes – and so there is a feeling that maybe the launching state, as defined in the present treaties and conventions, may not take care of all those technological possibilities that might arise in the future. But that's being addressed right now by the legal sub-committee of the Committee for the Peaceful Uses of Outer Space.

LITTLEJOHNS: Dr. Othman, I don't think we've talked quite enough about the benefits that might be conferred on developing countries by outer space technology, can you

give us a few more details about the sort of things that developing countries might look forward to as a result of this research?

OTHMAN: Yes. In fact, we have a good feeling about what developing countries can do today simply because the technology for building satellites is not that difficult to obtain today. So if in the past....

LITTLEJOHNS: So quite a small country could?

OTHMAN: Yes.

LITTLEJOHNS: Is that right?

OTHMAN: Any small country in fact can with the resources...

LITTLEJOHNS: The Guatemalans, Colum.

OTHMAN: I'm sure they could. If they have a group of engineers and scientists who know a little bit about computers, who know a bit about how to generate energy using solar panels, they could launch a satellite into space. I've just been a member of a team that launched a small satellite into space and with the small resources that we have we now have a satellite that can take pictures.

LITTLEJOHNS: Really?

OTHMAN: And today....

LITTLEJOHNS: You mean an OOSA satellite?

OTHMAN: Oh no, not... When I said "we" I meant I was part of a group of nations.

LITTLEJOHNS: I see.

OTHMAN: But universities today can build satellites for less than 10,000 dollars.

LITTLEJOHNS: Really?

OTHMAN: Yes.

LITTLEJOHNS: Maybe we should have one for this programme.

OTHMAN: We've been trying to think of this for quite some time but we've been encouraging Member States to have their own programmes. From those programmes they can invite other countries to take part and they can take part from the zero level, meaning that no finance involved only observing scientifically or technologically, to putting money into the programme. And this can be done and has been done. And so I think things are looking good for the developing countries in terms of trying to acquire that technology. But having said that, I should also say that the technology is moving so fast that in fact that gap

may get wider and not narrower. So the sooner we get the developing countries involved in whatever little way that they can the better off we are all.

LITTLEJOHNS: We have only a few seconds left but as an astrophysicist have you ever aspired to go out there on one of these space vehicles?

OTHMAN: Always, always.

LITTLEJOHNS: You have?

OTHMAN: Yes. That's my lifelong burning ambition to go up in space and to look at the stars, to contemplate the heavens from there.

LITTLEJOHNS: How did you get into astrophysics? What was it....

OTHMAN: Ooh! Nobody wanted me to be an astrophysicist because there were no jobs in my country. I'm from Malaysia. There was no way anybody with a Ph.D in astrophysics can get a job.

LITTLEJOHNS: That's all the time we have, Dr. Othman. Thank you for being with us on this edition of **World Chronicle**.

Our guest has been Dr. Mazlan Othman, Director of the United Nations Office for Outer Space Affairs. She was interviewed by Colum Lynch of *The Washington Post* and Robert Holloway of *Agence France-Presse/AFP*.

I'm Michael Littlejohns. Thank you for joining us. We invite you to be with us for the next edition of **World Chronicle.**

ANNOUNCER: Transcripts of the programme may be obtained free of charge by sending a stamped, self-addressed envelope to **World Chronicle**, United Nations, Room S-827L, New York, N.Y., 10017.

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